

REMARKS

1. Objections and Rejections

The drawings stand objected to under 37 C.F.R. § 1.83(a), as allegedly failing to show every feature of the claimed invention. Claim 2 also stands objected to as allegedly including informalities. Applicant respectfully disagrees with the objections to the drawings and respectfully traverses the objection to claim 2 in view of the foregoing amendments.

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by Japanese Patent No. JP-03-57101294A to Ohara. Moreover, claims 1, 2, 4, and 5 stand rejected under 35 U.S.C. § 103(a), as allegedly rendered obvious by Ohara in view of any of U.S. Patent No. 3,292,690 to Donaldson, U.S. Patent No. 5,697,433 to Kato, and U.S. Patent No. 6,453,989 to Watanabe et al. (“Watanabe”). Applicant respectfully disagrees.

2. Drawing Objections

As noted above, the Office Action objects to the drawings as allegedly failing to show every feature of the claimed invention. Specifically, the Office Action alleges that the drawings fail to show projection portions positioned across the entire width of the refrigerant path in combination with the inner fin, as described in claims 1 and 4, as amended. See, e.g., Office Action, Page 2, Lines 11-13. Applicant disagrees.

Specifically, Applicant’s **Fig. 10** depicts an inner fin 49 and projection portions 50 extending across the entire width of the refrigerant path. See, e.g., Appl’n, Pages 7, Para. [0037]. Therefore, Applicant respectfully requests that the Examiner withdraw the objections to the drawings.

3. Claim Objections

As noted above, the Office Action objects to claim 2 as allegedly including informalities. Specifically, the Office Action indicates that the phrase: “said at least one second tube” should be replaced by the phrase: “said at least one second tube plate.” See, e.g., Office Action, Page 2, Lines 18-20. By this Responsive Amendment, Applicant amends claim 2 in

accordance with the Office Action's suggestion. Therefore, the objection to claim 2 is deemed moot.

4. Anticipation Rejections

As noted above, the Office Action rejects claims 1 and 2 as allegedly anticipated by Ohara. "A claim is anticipated if and only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP 2131. The Office Action alleges that Ohara describes each and every element as set forth in claim 1. Specifically, the Office Action alleges that Ohara's **Figs. 3-6 and 8** anticipate claims 1 and 2. See, e.g., Office Action, Page 3, Lines 7-8. For the reasons set forth below, Applicant disagrees.

Applicant's claims 1 and 4, as amended, describe a heat exchanger in which "a plurality of projection portions project into said refrigerant path and extend in an oblique direction relative to said inner fin . . . and each of said plurality of projection portions are positioned across the entire width of said refrigerant path." (Emphasis added.) For example,

projection portions 50 and projection portions 51 may be formed integrally with first tube plate 44 and second tube plate 45, respectively, such that the number of parts or components of heat exchanger may not increase. Moreover, because each projection portion 50 and each recess portion 54 are formed across the width of refrigerant path 46, recess portions 54 may be in fluid communication with drain path 56.

See Appl'n, Page 7, Para. [0039], Lines 27-31; **Figs. 8-11**. For example, referring to **Fig. 10**, the refrigerant path is represented by twelve (12) vertical, broken lines, and protrusions 50 extend across the entire width of the refrigerant path, i.e., intersect with all of the vertical, broken lines representing the refrigerant path.

Similarly, because projection portion 51 and recess portion 55 are formed across the entire width of refrigerant path 47, recess portions 55 also may be in fluid communication with drain path 56. Consequently, as shown in **Fig. 11**, water may not be retained between heat transfer tube 43 and outer fin 3 because recess portions 54 and 55 guide the water to drain path 56.

See Appl'n, Page 7, Para. [0039], Line 31; Page 8, Para. [0039], Lines 1-4; **Figs. 8-11**.

In contrast, Ohara depicts an inner fin 8 positioned between a pair of plates 7, such that pair of plates 7 form a tube. **Figs. 3-6** of Ohara merely depict inner fin 8, pair of plates 7, and an outer fin 3. Moreover, **Fig. 8** of Ohara depicts an interior surface 12 of plate 7 may be made coarse with a crisscross pattern. This crisscross pattern prevents alleged “protrusions” formed in the plates 7 from extending “across the entire width of said refrigerant path,” as described in Applicant’s claim 1, as amended. (Emphasis added.) Thus, Applicant maintains that Ohara does not describe obliquely angled protrusions, as set forth in claims 1 and 2. Therefore, Applicant respectfully requests that the Examiner withdraw the anticipation rejections with respect to claims 1 and 2.

5. Obviousness Rejections

As noted above, the Office Action rejects claims 1, 2, 4, and 5, as allegedly rendered obvious by Ohara in view of any of Donaldson, Kato, and Watanabe. In order for the Office Action to establish a prima facie case of obviousness, at least three criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to those of ordinary skill in the art, to modify the primary reference as proposed by the Office Action. Second, there must be a reasonable expectation of success. Third, the prior art references must disclose or suggest all the claim limitations. MPEP 2143. For the reasons set forth below, Applicant maintains that the Office Action fails to establish a prima facie case of obviousness.

As noted above, Applicant’s claims 1 and 4 describe a heat exchanger in which “a plurality of projection portions project into said refrigerant path and extend in an oblique direction relative to said inner fin . . . and each of said plurality of projection portions are positioned across the entire width of said refrigerant path.” (Emphasis added.) For the reasons set forth above with respect to Ohara’s **Fig. 8**, Applicant maintains that Ohara does not disclose or suggest obliquely angled protrusions, as set forth in claims 1 and 4, as amended. Moreover, the Office Action does not allege that any of Donaldson, Kato, and Watanabe disclose or suggest these missing limitations.

Claims 2 and 5 depend from amended claims 1 and 4, respectively. “If an independent claim is non-obvious under 35 U.S.C. 103, then any claim depending therefrom is

nonobvious." MPEP 2143.03 (citations omitted). Therefore, Applicant respectfully requests that the Examiner also withdraw the obviousness rejections of claims 2 and 5.

CONCLUSION

Applicant respectfully submits that this application, as amended, is in condition for allowance, and such disposition is earnestly solicited. If the Examiner believes that an interview with Applicant's representatives, either in person or by telephone, would expedite prosecution of this application, we would welcome such an opportunity.

Applicant believes that no fees are due as a result of this submission. Nevertheless, in the event of any variance between the fees determined by Applicant and those determined by the PTO, please charge any such variance to the undersigned's Deposit Account No. 02-0375.

Respectfully submitted,
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Enclosure